

Amendments to the Claims:

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended) A vaccine for the prevention of lactic acidosis in a vertebrate, said vaccine comprising at least one isolated microorganism~~[[,]]~~ or living or dead cells thereof, or fragment or fragments thereof, wherein said microorganism, when living, is capable of producing lactic acid within the gut of said vertebrate a monogastric, herbivore or ruminant animal, and wherein said microorganism is selected from the group consisting of: Clostridium-like species, Prevotella-like species, Bacteroides-like species isolates LAB07 (Accession number: NM00/12636) and LAB05 (Accession number: NM00/12634), Enterococcus~~Enterococcus-like species, Selenomonas species ruminantium~~, non-dextran slime producing Streptococcus species equinus, Streptococcus bovis (strain: SbR1) (Accession number: NM99/04455), and non-slime producing lactic acid bacterial isolates, wherein said vaccine is effective for the prevention of lactic acidosis in said monogastric, herbivore, or ruminant animal.

2. (Currently amended) The vaccine of claim 1, wherein the microorganism is selected from the group consisting of: Streptococcus equinus Clostridium-like vitulinus, Selenomonas ruminantium, Prevotella-like species, Bacteroides-like species isolates LAB07 (Accession number: NM00/12636) and LAB05 (Accession number: NM00/12634), Enterococcus-like species, Streptococcus bovis (strain: SbR1) (Accession number: NM99/04455) and non-slime producing lactic acid bacterial isolates LAB02 (Accession number: NM00/12631), LAB06 (Accession number: NM00/12635) and LAB08 (Accession number: NM00/12637).

(Currently amended) The vaccine of claim 1 wherein the microorganism is selected from the group consisting of: Streptococcus bovis (strain: SbR1) (Accession number: NM99/04455), Streptococcus equinus (strain: SER1) (Accession number: NM99/04456)[[;]], Streptococcus equinus (strain: SER2) (Accession number: NM99/04457)[[;]], Selenomonas ruminantium

(strain: SRR1) (Accession number: NM99/04458)[(:)], *Selenomonas ruminantium* (strain: SRR3) (Accession number: NM99/04460)[(:)], *Clostridium-like vitulinus* (strain: LVR3) (Accession number: NM99/04461)[(:)], *Clostridium-like vitulinus* (strain: LVR4) (Accession number: NM99/04462), *Prevotella-like* isolates LAB01 (Accession number: NM00/12630) and LAB03 (Accession number: NM00/12632), *Bacteroides-like* isolates LAB07 (Accession number: NM00/12636) and, *Enterococcus-like* isolate LAB05 (Accession number: NM00/12634), *Streptococcus bovis* (SbR1), non-dextran slime producing *Streptococcus* isolate LAB04 (Accession number: NM00/12633) and non-slime producing lactic acid bacterial isolates LAB02 (Accession number: NM00/12631), LAB06 (Accession number: NM00/12635) and LAB08 (Accession number: NM00/12637).

4. (Canceled)

5. (Currently amended) The vaccine of claim 1, wherein said vaccine comprises live or dead intact cells of at least one of said microorganisms are intact cells.

6. (Canceled)

7. (Canceled)

8. (Previously presented) The vaccine of claim 1, wherein the vaccine is formulated for administration via intramuscular, subcutaneous, inhalation, topical or other parenteral route.

9. (Currently amended) A pharmaceutical composition for the prevention of lactic acidosis in a vertebrate comprising a pharmaceutically acceptable carrier, adjuvant and/or diluent and at least one isolated microorganism or living or dead cells thereof, wherein said microorganism, when living, is capable of producing lactic acid within the gut of a vertebrate monogastric, herbivore or ruminant animal, or fragment or fragments thereof, wherein said microorganism is selected from the group consisting of: *Clostridium-like* species, *Prevotella-like* species *Bacteroides-like* species isolates LAB07 (Accession number: NM00/12636) and LAB05 (Accession number: NM00/12634), *Enterococcus-like* species, *Selenomonas* species

W097
W097
ruminantium, non-dextran slime producing Streptococcus species equinus, Streptococcus bovis (strain: SbR1) (Accession number: NM99/04455) and non-slime producing lactic acid bacterial isolates, ~~together with a pharmaceutically acceptable carrier, adjuvant and/or diluent, wherein said pharmaceutical composition is effective for the prevention of lactic acidosis in said monogastric, herbivore, or ruminant animal.~~

- 9
W099
10. (Currently amended) The pharmaceutical composition of claim 9, wherein the microorganism is selected from the group consisting of: Streptococcus equinus, Clostridium-like vitulinus, Selenomonas ruminantium, Prevotella-like species, Bacteroides-like species isolates LAB07 (Accession number: NM00/12636) and LAB05 (Accession number: NM00/12634), Enterococcus-like species; Streptococcus bovis (strain: SbR1) (Accession number: NM99/04455) and non-slime producing lactic acid bacterial isolates LAB02 (Accession number: NM00/12631), LAB06 (Accession number: NM00/12635) and LAB08 (Accession number: NM00/12637).

- all OK
Accession #
11. (Currently amended) The pharmaceutical composition of claim 9, wherein the microorganism is selected from the group consisting of: Streptococcus bovis (strain: SbR1) (Accession number: NM99/04455), Streptococcus equinus (strain: SER1) (Accession number: NM99/04456)[[:]], Streptococcus equinus (strain: SER2) (Accession number: NM99/04457)[[:]], Selenomonas ruminantium (strain: SRR1) (Accession number: NM99/04458)[[:]], Selenomonas ruminantium (strain: SRR3) (Accession number: NM99/04460)[[:]], Clostridium-like vitulinus (strain: LVR3) (Accession number: NM99/04461)[[:]], Clostridium-like vitulinus (strain: LVR4) (Accession number: NM99/04462), Prevotella-like isolates LAB01 (Accession number: NM00/12630) and LAB03 (Accession number: NM00/12632), Bacteroides-like isolates LAB07 (Accession number: NM00/12636) and, Enterococcus-like isolate LAB05 (Accession number: NM00/12634), Streptococcus bovis (strain: SbR1), non-dextran slime producing Streptococcus isolate LAB04 (Accession number: NM00/12633) and non-slime producing lactic acid bacterial isolates LAB02 (Accession number: NM00/12631), LAB06 (Accession number: NM00/12635) and LAB08 (Accession number: NM00/12637).

Not for use
Boehringer
12. (Previously presented) The pharmaceutical composition according to claim 9, wherein the microorganism is provided as live cells, attenuated cells, killed whole cells, cell lysate, crude antigen mixture or purified antigen or antigens from the microorganism. *W099*

13. (Canceled)

14. (Canceled)

15. (Previously presented) The pharmaceutical composition according to claim 9, further comprising at least one cytokine. *W099*

16. (Previously presented) A method for inducing an immune response against lactic acidosis in a vertebrate, comprising administering to said vertebrate an immunologically effective amount of the vaccine in accordance with claim 1, or a pharmaceutical composition in accordance with claim 10. *W099*

17. (Previously presented) A method according to claim 16, further comprising administering at least one cytokine. *W099*

18. (Previously presented) A method for inducing an immune response against lactic acidosis in a vertebrate, comprising administering to said vertebrate an immunologically effective amount of the vaccine according to claim 1. *W099*

19. (Previously presented) A method for the treatment and/or prophylaxis of lactic acidosis in a vertebrate in need of said treatment and/or prophylaxis, wherein said method comprises administering to said vertebrate a therapeutically effective amount of the vaccine in accordance with claim 1, or a pharmaceutical composition in accordance with claim 10. *W099*

20. (Currently amended) The method of claim 19, wherein said method further comprises the administration of an active agent, wherein said active agent is selected from the group consisting of: antibiotics, enzyme preparations, clay preparations, compounds which slow the digesta flow, prebiotics and probiotics. *W099*

21. (Currently amended) A method for the treatment and/or prophylaxis of lactic acidosis in a vertebrate in need of said treatment and/or prophylaxis, wherein said method comprises administering to said vertebrate a therapeutically effective amount of the vaccine of claim 1, ~~an active agent capable of preventing or controlling lactic acid accumulation in the gut of a vertebrate, and wherein said lactic acid is produced by at least one microorganism selected from the group consisting of: Clostridium-like species, Prevotella-like species, Bacteroides-like species, Enterococcus-like species, Selenomonas species, non-dextran slime producing Streptococcus species and non-slime producing lactic acid bacterial isolates.~~

22. (Currently amended) The method of claim 21, wherein the microorganism is selected from the group consisting of: Streptococcus equinus, Clostridium-like vitulinus, Selenomonas ruminantium, Prevotella-like species, Bacteroides-like species, Enterococcus-like species, Streptococcus bovis SbR1 and non-slime producing lactic acid bacterial isolates LAB02 (Accession number: NM00/12631), LAB06 (Accession number: NM00/12635) and LAB08 (Accession number: NM00/12637).

23. (Currently amended) The method of claim 21, wherein said microorganism is selected from the group consisting of: Streptococcus bovis (strain: SbR1) (Accession number: NM99/04455), Streptococcus equinus (strain: SER1) (Accession number: NM99/04456)[(;)], Streptococcus equinus (strain: SER2) (Accession number: NM99/04457)[(;)], Selenomonas ruminantium (strain: SRR1) (Accession number: NM99/04458)[(;)], Selenomonas ruminantium (strain: SRR3) (Accession number: NM99/04460)[(;)], Clostridium-like vitulinus (strain: LVR3) (Accession number: NM99/04461)[(;)], Clostridium-like vitulinus (strain: LVR4) (Accession number: NM99/04462), Prevotella-like isolates LAB01 (Accession number: NM00/12630) and LAB03 (Accession number: NM00/12632), Bacteroides-like isolates LAB07 (Accession number: NM00/12636) and, Enterococcus-like isolate LAB05 (Accession number: NM00/12634), Streptococcus bovis (strain: SbR1), non-dextran slime producing Streptococcus isolate LAB04 (Accession number: NM00/12633) and non-slime producing lactic acid bacterial isolates LAB02 (Accession number: NM00/12631), LAB06 (Accession number: NM00/12635) and LAB08 (Accession number: NM00/12637).

24-51. (Canceled)

52. (Currently amended) An isolated culture of at least one microorganism selected from the group consisting of: *Streptococcus bovis* (strain: SbR1) (Accession number: NM99/04455), *Streptococcus equinus* (strain: SER1) (Accession number: NM99/04456)([:]), *Streptococcus equinus* (strain: SER2) (Accession number: NM99/04457)([:]), *Selenomonas ruminantium* (strain: SRR1) (Accession number: NM99/04458)([:]), *Selenomonas ruminantium* (strain: SRR3) (Accession number: NM99/04460)([:]), *Clostridium-like vitulinus* (strain: LVR3) (Accession number: NM99/04461)([:]), *Clostridium-like vitulinus* (strain: LVR4) (Accession number: NM99/04462), *Prevotella-like* isolates LAB01 (Accession number: NM00/12630) and LAB03 (Accession number: NM00/12632), *Bacteroides-like* isolates LAB07 (Accession number: NM00/12636) and, *Enterococcus-like* isolate LAB05 (Accession number: NM00/12634), *Streptococcus bovis* (strain: SbR1), non-dextran slime producing *Streptococcus* isolate LAB04 (Accession number: NM00/12633) and non-slime producing lactic acid bacterial isolates LAB02 (Accession number: NM00/12631), LAB06 (Accession number: NM00/12635) and LAB08 (Accession number: NM00/12637).

OK
All accession #s
11